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Home Pages of Ten Leading Global-Asian Academic Library Websites

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Abstract
A website's homepage is a gate to its content, and accuracy of structure is important. This is especially more important on academic library websites that are places for searching for general and specific information.
This is based on a survey-comparative method using researcher-made checklists. The population consists of ten leading global-Asian academic library websites confirmed by webometry site. Findings include three factors: search engine available on the first page (P = 0.000), available page for electronic resources separately (P = 0.003), image attraction (P = 0.002), and the bond between a library webpage and non-academic libraries (P = 0.001). There is a significant difference between ten top global-Asian academic library websites. To constituent differences there is no significant difference between two studied groups of websites. In addition, for constituent classification and referral to electronic resources, there is no significant difference between studied websites.

Introduction

Considering research-educational mission of academic libraries as well as broad extent of information, designing websites for these kinds of libraries has been focused for recent years. The purpose of this consideration is to give more accurate and prompt information to audience especially main library users as members. This has been moving increasingly ahead by using modern informational-communicational technologies in academic libraries.

Obviously, accelerated changes in informational-communicational technologies field require libraries to move with planning to design appropriate websites qualified for users and operate based on previous experiences and knowledge. Therefore, they will gain a targeted and integrated website that is responsible for library service audiences. For this reason we will review and compare academic library websites that are globally prominent with the presumption that superiority of this group of libraries originates from their optimal services helping researchers and academic library websites designers perform better.

Problem Statement and Purpose

By emerging modern informational-communicational technologies especially internet as well as fundamental changes in human's life cycle, libraries and information centers like other social organizations have been affected by these technologies and they continuously make efforts to grow providing services through internet and web and reserve cooperation with the changes. One of the facilities developed by libraries to reach the goal is designing websites to implement library processes virtually.

Library websites was first used as places to introduce a library and its collection (Agingu, 2000). But by expanding internet technologies and more information accessibility, library websites particularly academic libraries do not merely introduce libraries target but they have been engaged as a golden information gate to access information available on different websites, electronic resources, etc.

Designing these websites and allocating efficient factors could be very important considering academic libraries cause as well as the libraries websites importance to communicate with users. But libraries have been still passing primary steps and displaying some defects and disorganizations on their websites. Therefore, what must be considered is to include qualifications which produce more dynamism on library websites and optimal relationship with users.

By specifying the difference between structural-constituent features of homepages of leading global-Asian academic libraries as well as comparing them with each other to assign differences and similarities on one hand and advantages and disadvantages of these websites on the other hand it seems we are able to gain standards to design academic library websites optimally.

Research Methodology

This research is a comparative-survey type. To assign samples, webometric classification data based on scientific standards have been engaged. In the study, a researcher-made checklist which is a combination of checklists developed by Raward (2001) and Fattahi & Hasanzadeh (2003) has been used. The checklist includes two parts, content and structure analysis of academic library websites as well as realizing constituent classification method of website and electronic resources type.

To analyze data, Chi-square tests and one-way variance analysis have been employed by using SPSS.

Statistical Population

The statistical population consists of academic library websites of 10 leading global-Asian universities displayed in following tables. In the study totally 20 websites belonging to global-Asian leading academic libraries have been reviewed.

Table 1. The list of leading Asian academic library websites

Library website address	University
http://www.lib.u-tokyo.ac.jp/index-e.htm	Tokyo University
http://www.lib.ntu.edu.tw/english/index-htm	National University of Taiwan
http://www.kyoto-u.ac.jp/index-e.htm	Kyoto University
http://www.lib.hku.hk	Hong Kong University
http://wwwtsukuba.ac.jp/protal/index-eng.php	Tsukuba University (Japan)
http://www.lib.en.ncku.edu.tw/bin/home.php	National University of Cheng Keng
http://www.162.105.138.207/enhtml/index.htm	Beijing University
http://www.libcuhk.edu.hk/common/reader/channel	Chinese University of Hong Kong
http://wwwtsinghua.edu.cu/eng/index.isp	Tsinghai University
http://www.nagoya-u.ac.jp/en	Nagoya University

Table 2. The list of leading global academic library websites

Library website	University
http://libraries.mit.edu	Massachusetts Institute of Technology
http://lib.harvard.edu	Harvard University
http://library.stanford.edu	Stanford University
http://lib.berkeley.edu	University of California--Berkeley
http://www.cornell.edu/libraries	Cornell University
www.library.wisc.edu//books	University of Wisconsin
http://www.lib.umn.edu	University of Minnesota
http://www.library.illinois.edu	University of Illinois
http://www.umich.edu/libraries.php	University of Michigan

Research Questions

To reach the research goals, following questions are suggested:

1. What are the differences among homepages of global-Asian academic library websites from the viewpoint of structural features?

2. What are the differences among homepages of global-Asian academic library websites from the viewpoint of constituent features?

3. How different are reviewed academic library websites from a constituent classification point of view?

4. How different are reviewed academic library websites from an electronic resources point of view?

Research Variables

Independent variable: Academic library websites

Dependent variable: constituent-structural features of websites.

Research Background

Steel (2001) suggests that constituent differences between the countries' websites result from cultural differences. Rich & Rabine (2006) explain some changes in academic library websites in the United States, electronic journal accessibility in libraries, academic library websites analysis, and typical terms for electronic journals on these websites. McMullen (2001) suggests five things to be avoided while designing a homepage of a library website. He also indicates that users would like a website in which they have easy access to books, journals, and information. They expect a library website to operate as a gate to the internet.

Smith & Telwal (2002) review the links among academic websites of Australian universities. The data are compared with the data collected from commercial search engines. Then the web impressive factor for Australian universities is measured by dividing the number of three countries' links to academic employees at the university. Robbins and Stylianou (2003) study structural-constituent features of 90 commercial websites based on "culture" and "career". The research data shows that there is a significant difference among most constituent features of websites in various cultural groups. Interestingly, no difference is seen on structural features. They also discover that there is a slight relationship between structural-constituent features of websites and "resources type".

George (2005) discovers that the website involves many problems about leading, screen page design, and labeling. He also suggests that following factors help usability increase; graphic and color attraction, font type and size, labeling and appropriate location of subject, accessibility of information observation, label-making and classification of keywords, legibility, and displayed subject integration.

Definitions

Constituent feature: Robbins and Stylianou (2003) believe that content is what available on a website and it recognizes various information types. According to the definition, constituent features can be divided into two categories:

1. Features observed on all websites such as title, index, help, etc.

2. Features that represent services specifically offered at a library such as: information service, inter-library loan, etc.

Structural features: According to the Huizingh's definition (2000), structure means a direction helping a website visitor access to content. Therefore, the factors such as website address and range, visual attraction, website map, and so on, may be considered structural features. In fact, the features are user-oriented that is why a client could be conducted to content through them.

Website design: a process planned to help content, information, and other purposed options in a certain structural framework to be transferred and convenient to the internet electronic environment (Babaee, 2005).

Academic libraries: libraries established to provide service to three groups at universities; staff, students, and faculty.

Research Findings

Question 1: What is the difference between homepage of global-Asian academic library websites from the viewpoint of structural features?

Table 3. Structural features of leading global-Asian academic library websites

Asia		World			
No	Yes	No	Yes		
Percent	Percent	Percent	Percent	District Structural Features	Series
	100	0	100	first page	
	100	0	100	address-range	
10	90	0	100	organization on the first page	
	100	20	80	convenient option(s) on the title page to access electronic resources	
10	90	100	0	convenient search engine on the first page	
	100	60	40	convenient page for electronic resources separately	
	100	30	70	electronic mail on the first page	
	100	0	100	text legibility	
	100	40	60	appropriate font	
	100	0	100	upload speed & access to issues	10

10	90	80	20	visual attraction	1
	100	0	100	retrieval convenience by general search engines	2
10	80	70	30	website map	3
	100	0	100	correct spelling & grammar	4
100	0	80	20	printability	5
20	80	30	70	convenient link to other academic libraries	6
	100	0	100	convenient link to other parts of the library	**7**
30	70	100	0	link between the library homepage and non-academic libraries	18
20	80	0	100	link between the library homepage and institutional homepage	9

Table 3 shows the similarity between 10 leading global-Asian academic libraries, based on structural features, such as the first page, address & range, text legibility, upload speed & access to issues, retrieval convenience by general search engines, correct spelling & grammar, convenient link to other parts of the library. Therefore the reviewed websites include mentioned factors comprehensively.

In addition, ten leading global academic library websites show better position for three factors than Asian websites. The factors are: organization on the first page (100% vs 90%), printability (20% vs 0%), and the link between the library homepage and organizational homepage (100% vs 80%). But ten leading Asian academic library websites demonstrate better operation than global universities for other factors.

Table 4. Comparison of structural differences between leading global-Asian academic library websites

P Value	**X2 value**	**Features**	**Series**
	000	first page	
	000	address-range	
/305	/053	organization on the first page	
/135	2/222	convenient option(s) on the title page to join electronic resources	
00	6/364	convenient search engine on the first page	
/003	8/571	convenient page for electronic resources separately	
/06	3/529	electronic mail on the first page	
	000	text legibility	
/025	5	appropriate font	
	000	upload speed & access to issues	**0**
/002	9/899	visual attraction	**1**
1	000	retrieval convenience by general search engines	**12**
/025	5/051	website map	**3**
	000	correct spelling & grammar	**4**
/136	2/222	Printability	**5**
606	0/267	convenient link to other academic libraries	**6**
	000	convenient link to other parts of the library	**7**
/001	0/769	the link between the library homepage and non-academic libraries	**8**
/136	2/222	the link between the library homepage and organizational homepage	**9**

To compare reviewed websites based on current structural differences, table 4 shows that there are significant differences in following factors with regard to Chi-square test data:

Convenient search engine on the first page (P = 000), convenient page for electronic resources separately (P = 0.003), visual attraction (P = 0.002), and the link between the library homepage and non-academic libraries (P = 0.001).

The review of table 3 indicates that studied Asian websites have more excellence for all factors than global universities.

Question 2: What is the difference between homepage of global-Asian academic library websites from the viewpoint of constituent features?

Table 5. Frequency distribution of constituent features of leading global-Asian academic library websites.

Asia		World			
Yes %	**No %**	**Yes %**	**No %**		
0	0	0	0	last date of update	
	00		00	library resource list	
0	0	0	0	FAQ	
0	0	0	0	News and updates	
0	0	0	0	Web manager email	
0	0	0	0	library's future plans	
0	0	0	0	reservation & safekeeping	
0	00	0	0	Electronic reference resources	
0	90	0	0	Library departments	
	00	0	0	library history	**0**
0	0	0	0	common thematic list	**1**
0	0	0	0	Library services	**2**
00	0	0	0	discussion group	**3**
0	0	0	0	databases	**4**
0	0	0	0	application form	**5**

Table 5 shows that there are similarities between reviewed global-Asian websites for following factors:

Library resource list (100%), introducing library's parts (90%), and bibliographic database & full text (60%).

For following factors, global websites excel Asian ones:

Websites designer's address & management (90% Vs 70%), convenient service for reservation & safekeeping (90% Vs 60%), common thematic list (90% Vs 60%), library's specific service (60% Vs 20%), and discussion group (20% Vs 0%).

For the rest of the factors, the priority is considered for ten leading Asian academic library websites.

Table 6. Review of constituent differences between leading global-Asian academic library websites

P Value	X2 value	Features	Series
0/074	3/2	last date of update	**1**
1	000	library resource list	**2**
0/160	1/978	frequently asked questions FAQ	**3**
0/160	1/978	Library news	**4**
0/264	1/250	website designer's address & management	**5**
0/606	0/267	introducing library's future plans	**6**
0/121	2/4	convenient service for reservation & safekeeping	**7**
0/010	6/667	electronic reference resources	**8**
1	000	introducing library's departments	**9**
0/136	2/222	library's history	**10**
0/121	2/4	common thematic list	**11**
0/068	3/333	library's specific service	**12**
0/136	2/222	discussion group	**13**
1	000	bibliographic database & full text	**14**
0/264	1/25	application form	**15**

Table 6 shows that there is no significant difference between ten leading global-Asian academic library websites with regard to constituent features.

Question 3: How different are reviewed academic library websites from a constituent classification point of view?

Table 7. Comparison of constituent classification features on leading global-Asian academic library websites

Asia		world		District Constituent classification feature
percent	No.	percent	No.	
18/2	2	25/9	7	based on service type (reference, etc._
18/2	2	22/2	6	based on reference type (print, electronic)
27/3	3	7/4	2	alphabetically list of services
0	0	33/3	9	Based on information origin (library itself, other centers)
27/3	3	11/1	3	other methods
100	10	100	27	total

Table 7 shows that total constituent classification on the ten leading global academic libraries is more than Asian universities (27 vs 10). At global universities the most and least percentages of constituent classification based on information origin (library itself, other centers) and alphabetically names with reference and service title are 33.3% and 7.4% respectively. At Asian universities the most and least percentages of constituent classification based on alphabetically names with reference and service title, and information origin (library itself, other centers) are 27.3% and 0% respectively.

Table 8. Chi-Square test: review of difference between leading global-Asian academic library websites with regard to constituent classification

	Pearson Chi-Square	DF	P Value
Pearson Chi-Square	10/017	5	0/750

Table 8 shows that there is no significant difference of constituent classification between leading global-Asian academic library websites (P = 0.750).

Question 4: How different are reviewed academic library websites from an electronic resources point of view?

Table 9. Frequency distribution of electronic resource type on leading global-Asian academic library websites

Asia		World		
Percent	No.	Percent	No.	District Resource Type
21/3	0	24		journal
21/3	0	20		book
4/9	7	2		research articles
0	0	4		text books
21/3	0	4		reference resources
21/3	0	36		databases
100	7	100	5	total

Table 9 shows that on ten leading global-Asian academic library websites, the most and least percentages of websites with links for databases and both reference resources and text books are 36% and 4% respectively. At Asian universities the most and least percentages of websites with referrals for journal, book, reference resources, databases and text books are 21.3% and 0% respectively.

Table 10. Chi-Square test: review of the difference between leading global-Asian academic library websites with regard to referred electronic resource type

	Pearson Chi-Square	DF	P Value
Pearson Chi-Square	6/575	5	0/254

Table 10 shows that there is no significant difference between ten leading global-Asian academic library websites with regard to referred electronic resource type (P = 0.254).

Conclusion and Discussion

To respond to the first question in accordance with the data it could be concluded that structurally ten leading Asian academic library websites design are more perfect than global universities, based on descriptive findings, leading Asian academic library websites have poorly performed for just 3 out of 19 structural features. These are as follows:

Convenient organization on the first page (100% vs 90%), printability (20% vs 0%), and the bond between library homepage and academic organizational homepage (100% vs 80%).

As it can be seen, the main weak point of reviewed Asian websites is not including printability on the first page, but this weak point is not important for the two other factors. For other factors there is similarity between reviewed websites or, Asian websites show more priority than global ones. This priority can be seen also in the review of significant difference between purposed structural features because there is significant difference in only 4 out of 19 factors and in the rest of the factors, the priority belongs to the reviewed Asian websites, the 4 factors are:

Convenient search engine on the first page (P = 000), convenient page for electronic resources separately (P = 0.003), visual attraction (P = 0.002), and the bond between library homepage and non-academic libraries (P = 0.001).

To respond to the second question about constituent features of ten leading global-Asian academic library websites, the data indicate that the priority of 7 out of 15 features belongs to Asian websites while the ten leading global academic library websites excel Asian websites for 5 factors: website designer's address and management (90% vs 70%), convenient reservation and safekeeping service (90% vs 60%), common thematic list (90% vs 60%), library's specific service (60% vs 20%), and discussion group (20% vs 0%).

As it can be observed, the main weak point of reviewed Asian websites is not including discussion group (0%) and library's specific service (20%) but the weak point in other factors is not important. To review the differences, Chi-Square test indicates that despite the collected data, there is no significant difference between the two groups of websites. This would suggest that design of ten leading global-Asian academic library websites has been considered equally. Otherwise, the data indicate that the main difference between reviewed websites is related to structural type but constituent, although the priority of two features belongs to ten leading Asian academic library websites.

The significant differences determined in structural features are specific and limited and can be easily examined and changed. But the effects of cultural differences should not be ignored, according to the studies developed by Steel (2001) and Robbins and Stylianou (2003), cultural differences are influential in website designs.

Therefore uniformity of website designs at international level may help search, retrieval, and access to information to be integrated and coordinated and also usability will be more convenient for users around the world.

To respond to the third question about constituent classification, it can be seen that although there is no significant difference between the two reviewed groups of websites (P = 0.750), there are some slight differences. The review of differences indicates more priority of global websites than Asian ones except for constituent classification based on alphabetically names with resource and service title that ten leading Asian academic library websites show better performance than global ones (27.3% in Asia vs 7.4% in the world).

To respond to the fourth question about referral to electronic resources it can be seen that there is no significant difference between the reviewed global-Asian websites. But the number of referrals to electronic resources in various forms in ten leading Asian academic library websites is more than global ones (47 cases in Asia vs 25 cases in the world). The important point on this comparison is lack of referral to text books on the reviewed Asian websites. Although this can be seen just once on the ten leading global academic library websites, therefore it will be considered that both groups of websites pay trivial attention to this type of referral. This point should be regarded

because the reviewed websites are academic and major part of clients will be the students who need to use text resources.

Recommendations

According to the findings, following points for designing of library websites are recommended:

Using librarians' ideas on designing library websites
Verifying constituent features
Providing training for librarians on user-oriented website design
Raising awareness of copyright aspects of websites.

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